

SEQUENCE LISTING

<110> Chisso Corporation
FUJIMORI KOGYO Co., Ltd.

<120> Thrombin Derivative and Pharmaceutical Composition Containing the Same

<130> 5165-C5059

<150> JP 2004-080950

<151> 2004-03-19

<150> JP 2004-170346

<151> 2004-06-08

<150> JP 2004-217834

<151> 2004-07-26

<150> JP 2004-315631

<151> 2004-10-29

<150> JP 2005-29360

<151> 2005-02-04

<160> 58

<170> PatentIn version 3.1

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<211> 927

<212> DNA

<213> Homo sapiens

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〈221〉 CDS

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Ser Gly Glu Ala Asp Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser

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ctg gag gac aaa acc gaa aga gag ctc ctg gaa tcc tac atc gac ggg

Leu Glu Asp Lys Thr Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly

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cgc att gtg gag ggc tgc gat gca gag atc ggc atg tca cct tgg cag

48

96

144

192

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Val	Met	Leu	Phe	Arg	Lys	Ser	Pro	Gln	Glu	Leu	Leu	Cys	Gly	Ala	Ser	
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ctc	atc	agt	gac	cgc	tgg	gtc	ctc	acc	gcc	gcc	cac	tgc	ctc	ctg	tac	288
Leu	Ile	Ser	Asp	Arg	Trp	Val	Leu	Thr	Ala	Ala	His	Cys	Leu	Leu	Tyr	
				85					90					95		
ccg	ccc	tgg	gac	aag	aac	ttc	acc	gag	aat	gac	ctt	ctg	gtg	cgc	att	336
Pro	Pro	Trp	Asp	Lys	Asn	Phe	Thr	Glu	Asn	Asp	Leu	Leu	Val	Arg	Ile	
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		115					120					125				
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Met	Leu	Glu	Lys	Ile	Tyr	Ile	His	Pro	Arg	Tyr	Asn	Trp	Arg	Glu	Asn	
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Ser	Asp	Tyr	Ile	His	Pro	Val	Cys	Leu	Pro	Asp	Arg	Glu	Thr	Ala	Ala	
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agc	ttg	ctc	cag	gct	gga	tac	aag	ggg	cgg	gtg	aca	ggc	tgg	ggc	aac	576
Ser	Leu	Leu	Gln	Ala	Gly	Tyr	Lys	Gly	Arg	Val	Thr	Gly	Trp	Gly	Asn	
		180						185					190			
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	210				215				220							
tcc	acc	cgg	atc	cgc	atc	act	gac	aac	atg	ttc	tgt	gct	ggt	tac	aag	720
Ser	Thr	Arg	Ile	Arg	Ile	Thr	Asp	Asn	Met	Phe	Cys	Ala	Gly	Tyr	Lys	
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Pro	Asp	Glu	Gly	Lys	Arg	Gly	Asp	Ala	Cys	Glu	Gly	Asp	Ser	Gly	Gly	
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 35 40 45
 Arg Ile Val Glu Gly Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln
 50 55 60
 Val Met Leu Phe Arg Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser
 65 70 75 80
 Leu Ile Ser Asp Arg Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr
 85 90 95
 Pro Pro Trp Asp Lys Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile
 100 105 110
 Gly Lys His Ser Arg Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser
 115 120 125
 Met Leu Glu Lys Ile Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn
 130 135 140
 Leu Asp Arg Asp Ile Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe
 145 150 155 160
 Ser Asp Tyr Ile His Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala
 165 170 175
 Ser Leu Leu Gln Ala Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn
 180 185 190
 Leu Lys Glu Thr Trp Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val
 195 200 205
 Leu Gln Val Val Asn Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp
 210 215 220
 Ser Thr Arg Ile Arg Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys
 225 230 235 240
 Pro Asp Glu Gly Lys Arg Gly Asp Ala Cys Glu Gly Asp Ser Gly Gly
 245 250 255
 Pro Phe Val Met Lys Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly
 260 265 270
 Ile Val Ser Trp Gly Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe
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 Gln Phe Gly Glu
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 Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
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 caa gca cgg tgc ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag 144
 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
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 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp

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gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc			288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly			
	85	90	95
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg			336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg			
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aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc			384
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg			
	115	120	125
tgg gtc ctc acc gcc gcc cac tgc ctc ctg tac ccg ccc tgg gac aag			432
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Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg			
145	150	155	160
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc			528
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile			
	165	170	175
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att			576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile			
	180	185	190
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac			624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His			
	195	200	205
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Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala			
	210	215	220
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225	230	235	240
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac			768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn			
	245	250	255
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc			816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg			
	260	265	270
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa			864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys			
	275	280	285
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Arg Gly Asp Ala Cys Glu Gly Asp Ser Gly Gly Pro Phe Val Met Lys			
	290	295	300
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt			960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly			
305	310	315	320

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 35 40 45
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285

Arg Gly Asp Ala Cys Glu Gly Asp Ser Gly Gly Pro Phe Val Met Lys
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 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
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 caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag 144
 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac 192
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
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 tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc 240
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
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 gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc 288
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg 336
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc 384
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 tgg gtc ctc acc gcc gcc cac tgc ctc ctg tac ccg ccc tgg gac aag 432
 Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc 480
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg

145	150	155	160	
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Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile				
	165	170	175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att				576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile				
	180	185	190	
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac				624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His				
	195	200	205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct				672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala				
	210	215	220	
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Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp				
	225	230	235	240
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac				768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn				
	245	250	255	
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc				816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg				
	260	265	270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa				864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys				
	275	280	285	
cga ggg gat gcc tgt gaa gct gac ggt ggg gga ccc ttt gtc atg aag				912
Arg Gly Asp Ala Cys Glu Ala Asp Gly Gly Gly Pro Phe Val Met Lys				
	290	295	300	
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt				960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly				
	305	310	315	320
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc				1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe				
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cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag				1056
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu				
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Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp		
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Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg		
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Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys		
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Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg		
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Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile		
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Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile		
180	185	190
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His		
195	200	205
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala		
210	215	220
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp		
225	230	235
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn		
245	250	255
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg		
260	265	270
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys		
275	280	285
Arg Gly Asp Ala Cys Glu Ala Asp Gly Gly Gly Pro Phe Val Met Lys		
290	295	300
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly		
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Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe		
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Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu		
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Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln	
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Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu	
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Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp	
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Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly	
85 90 95	
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg	336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg	
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Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg	
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Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys	
130 135 140	
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc	480
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg	
145 150 155 160	
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc	528
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile	
165 170 175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att	576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile	
180 185 190	
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac	624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His	
195 200 205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct	672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala	
210 215 220	
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg	720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp	
225 230 235 240	
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac	768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn	

245	250	255	
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc			816
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260	265	270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa			864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys			
275	280	285	
cga ggg gat gcc tgt gaa ggt gac gct ggg gga ccc ttt gtc atg aag			912
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys			
290	295	300	
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt			960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly			
305	310	315	320
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc			1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe			
325	330	335	
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag			1056
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu			
340	345	350	

<210> 10
 <211> 351
 <212> PRT
 <213> Homo sapiens

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 Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
 20 25 30
 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile

180	185	190
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His		
195	200	205
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala		
210	215	220
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp		
225	230	235
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn		
245	250	255
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg		
260	265	270
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys		
275	280	285
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys		
290	295	300
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly		
305	310	315
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe		
325	330	335
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu		
340	345	350

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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (1)..(1056)
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Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala	
1 5 10 15	
gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag	96
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln	
20 25 30	
caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag	144
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu	
35 40 45	
tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac	192
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp	
50 55 60	
tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc	240
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr	
65 70 75 80	
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc	288

Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly	
85 90 95	
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg	336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg	
100 105 110	
aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc	384
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg	
115 120 125	
tgg gtc ctc acc gcc gcc cac tgc ctc ctg tac ccg ccc tgg gac aag	432
Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys	
130 135 140	
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc	480
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg	
145 150 155 160	
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc	528
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile	
165 170 175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att	576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile	
180 185 190	
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac	624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His	
195 200 205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct	672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala	
210 215 220	
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg	720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp	
225 230 235 240	
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac	768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn	
245 250 255	
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc	816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg	
260 265 270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa	864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys	
275 280 285	
cga ggg gat gcc tgt gaa ggt gac act ggg gga ccc ttt gtc atg aag	912
Arg Gly Asp Ala Cys Glu Gly Asp Thr Gly Gly Pro Phe Val Met Lys	
290 295 300	
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt	960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly	
305 310 315 320	
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc	1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe	
325 330 335	
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag	1056
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu	

340

345

350

<210> 12
 <211> 351
 <212> PRT
 <213> Homo sapiens

<400> 12

Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala
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 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Gly Asp Thr Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe

	325	330	335
Arg	Leu Lys Lys Trp Ile Gln Lys Val	Ile Asp Gln Phe Gly Glu	
	340	345	350

<210> 13
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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (1).. (1056)
 <223>

<400> 13

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Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala	
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gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag	96
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln	
20 25 30	
caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag	144
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu	
35 40 45	
tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac	192
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp	
50 55 60	
tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc	240
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr	
65 70 75 80	
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc	288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly	
85 90 95	
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg	336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg	
100 105 110	
aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc	384
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg	
115 120 125	
tgg gtc ctc acc gcc gcc cac tgc ctc ctg tac ccg ccc tgg gac aag	432
Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys	
130 135 140	
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc	480
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg	
145 150 155 160	
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc	528
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile	
165 170 175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg aac att	576

Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asn Ile
 180 185 190
 gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac 624
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct 672
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg 720
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac 768
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc 816
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa 864
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 cga ggg gat gcc tgt gaa gct gac gct ggg gga ccc ttt gtc atg aag 912
 Arg Gly Asp Ala Cys Glu Ala Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt 960
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc 1008
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag 1056
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

<210> 14
 <211> 351
 <212> PRT
 <213> Homo sapiens

<400> 14
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 20 25 30
 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80

Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asn Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Ala Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

<210> 15
 <211> 1056
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1).. (1056)
 <223>

<400> 15

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 Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala
 1 5 10 15

gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag	96
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln	
20 25 30	
caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag	144
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu	
35 40 45	
tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac	192
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp	
50 55 60	
tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc	240
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr	
65 70 75 80	
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc	288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly	
85 90 95	
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg	336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg	
100 105 110	
aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc	384
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg	
115 120 125	
tgg gtc ctc acc gcc gcc cac tgc ctc ctg tac ccg ccc tgg gac aag	432
Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys	
130 135 140	
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc	480
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg	
145 150 155 160	
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc	528
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile	
165 170 175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att	576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile	
180 185 190	
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac	624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His	
195 200 205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct	672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala	
210 215 220	
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg	720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp	
225 230 235 240	
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac	768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn	
245 250 255	
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc	816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg	
260 265 270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa	864

Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 cga ggg gat gcc tgt gaa ggt gac gtt ggg gga ccc ttt gtc atg aag 912
 Arg Gly Asp Ala Cys Glu Gly Asp Val Gly Gly Pro Phe Val Met Lys
 290 295 300
 agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt 960
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc 1008
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag 1056
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

<210> 16
 <211> 351
 <212> PRT
 <213> Homo sapiens

<400> 16
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 35 40 45
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220

Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

<210> 17
 <211> 1056
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)..(1056)
 <223>

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 gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag 96
 Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
 20 25 30
 caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag 144
 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac 192
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc 240
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc 288
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg 336
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110

aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc	384
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg	
115 120 125	
tgg gtc ctc acc gcc gcc cac tgc ctc ctg tac ccg ccc tgg gac aag	432
Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys	
130 135 140	
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc	480
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg	
145 150 155 160	
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc	528
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile	
165 170 175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att	576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile	
180 185 190	
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac	624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His	
195 200 205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct	672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala	
210 215 220	
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg	720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp	
225 230 235 240	
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac	768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn	
245 250 255	
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc	816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg	
260 265 270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa	864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys	
275 280 285	
cga ggg gat gcc tgt gaa ggt gac gat ggg gga ccc ttt gtc atg aag	912
Arg Gly Asp Ala Cys Glu Gly Asp Asp Gly Gly Pro Phe Val Met Lys	
290 295 300	
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt	960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly	
305 310 315 320	
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc	1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe	
325 330 335	
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag	1056
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu	
340 345 350	

<210> 18

<211> 351

<212> PRT

<213> Homo sapiens

<400> 18

Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala
 1 5 10 15
 Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
 20 25 30
 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Gly Asp Asp Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

<210> 19

<211> 1056
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)..(1056)
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<400> 19
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 Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala
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 gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag 96
 Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
 20 25 30
 caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag 144
 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac 192
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc 240
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc 288
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg 336
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc 384
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 tgg gtc ctc acc gcc gcc cac tgc ctc ctg tac ccg ccc tgg gac aag 432
 Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc 480
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc 528
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att 576
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac 624
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205

cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct 672
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg 720
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac 768
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc 816
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa 864
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 cga ggg gat gcc tgt gaa ggt gac aat ggg gga ccc ttt gtc atg aag 912
 Arg Gly Asp Ala Cys Glu Gly Asp Asn Gly Gly Pro Phe Val Met Lys
 290 295 300
 agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt 960
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc 1008
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag 1056
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

<210> 20
 <211> 351
 <212> PRT
 <213> Homo sapiens

<400> 20
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 1 5 10 15
 Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
 20 25 30
 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg

115	120	125
Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys		
130	135	140
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg		
145	150	155
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile		
165	170	175
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile		
180	185	190
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His		
195	200	205
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala		
210	215	220
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp		
225	230	235
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn		
245	250	255
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg		
260	265	270
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys		
275	280	285
Arg Gly Asp Ala Cys Glu Gly Asp Asn Gly Gly Pro Phe Val Met Lys		
290	295	300
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly		
305	310	315
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe		
325	330	335
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu		
340	345	350

<210> 21
 <211> 1056
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1).. (1056)
 <223>

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Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala	
1 5 10 15	
gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag	96
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln	
20 25 30	
caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag	144
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu	

35	40	45	
tac cag act ttc ttc aat ccg agg acc ttt ggc tgc gga gag gca gac			192
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp			
50	55	60	
tgt ggg ctg cga cct ctg ttc gag aag aag tgc ctg gag gac aaa acc			240
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr			
65	70	75	80
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc			288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly			
85	90	95	
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg			336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg			
100	105	110	
aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc			384
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg			
115	120	125	
tgg gtc ctc acc gcc gcc cac tgc ctc ctg tac ccg ccc tgg gac aag			432
Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys			
130	135	140	
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc			480
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg			
145	150	155	160
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc			528
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile			
165	170	175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg aac att			576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asn Ile			
180	185	190	
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac			624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His			
195	200	205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct			672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala			
210	215	220	
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg			720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp			
225	230	235	240
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac			768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn			
245	250	255	
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc			816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg			
260	265	270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa			864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys			
275	280	285	
cga ggg gat gcc tgt gaa ggt gac gct ggg gga ccc ttt gtc atg aag			912
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys			
290	295	300	

agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt 960
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc 1008
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag 1056
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

<210> 22
 <211> 351
 <212> PRT
 <213> Homo sapiens

<400> 22
 Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala
 1 5 10 15
 Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
 20 25 30
 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asn Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg

260	265	270
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys		
275	280	285
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys		
290	295	300
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly		
305	310	315
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe		
325	330	335
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu		
340	345	350

<210> 23
 <211> 1056
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1).. (1056)
 <223>

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Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala	
1 5 10 15	
gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag	96
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln	
20 25 30	
caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag	144
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu	
35 40 45	
tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac	192
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp	
50 55 60	
tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc	240
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr	
65 70 75 80	
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc	288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly	
85 90 95	
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg	336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg	
100 105 110	
aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc	384
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg	
115 120 125	
tgg gtc ctc acc gcc gcc cac tgc ctc ctg tac ccg ccc tgg gac aag	432
Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys	

130	135	140	
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc			480
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg			
145	150	155	160
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc			528
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile			
165	170	175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att			576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile			
180	185	190	
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac			624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His			
195	200	205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct			672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala			
210	215	220	
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg			720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp			
225	230	235	240
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac			768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn			
245	250	255	
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc			816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg			
260	265	270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa			864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys			
275	280	285	
cga ggg gat gcc tgt gaa gct gac gct ggg gga ccc ttt gtc atg aag			912
Arg Gly Asp Ala Cys Glu Ala Asp Ala Gly Gly Pro Phe Val Met Lys			
290	295	300	
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt			960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly			
305	310	315	320
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc			1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe			
325	330	335	
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag			1056
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu			
340	345	350	

<210> 24

<211> 351

<212> PRT

<213> Homo sapiens

<400> 24

Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala

1

5

10

15

Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
 20 25 30
 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Ala Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

<210> 25

<211> 1056

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1).. (1056)

<223>

<400> 25

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Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala	
1 5 10 15	
gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag	96
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln	
20 25 30	
caa gca cgg tgc ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag	144
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu	
35 40 45	
tac cag act ttc ttc aat ccg agg acc ttt ggc tgc gga gag gca gac	192
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp	
50 55 60	
tgt ggg ctg cga cct ctg ttc gag aag aag tgc ctg gag gac aaa acc	240
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr	
65 70 75 80	
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc	288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly	
85 90 95	
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg	336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg	
100 105 110	
aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc	384
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg	
115 120 125	
tgg gtc ctc acc gcc gcc gcc tgc ctc ctg tac ccg ccc tgg gac aag	432
Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys	
130 135 140	
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc	480
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg	
145 150 155 160	
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc	528
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile	
165 170 175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att	576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile	
180 185 190	
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac	624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His	
195 200 205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct	672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala	
210 215 220	
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg	720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp	

225	230	235	240	
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac				768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn				
245	250	255		
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc				816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg				
260	265	270		
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa				864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys				
275	280	285		
cga ggg gat gcc tgt gaa ggg gac gcc ggg gga ccc ttt gtc atg aag				912
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys				
290	295	300		
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt				960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly				
305	310	315	320	
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc				1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe				
325	330	335		
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag				1056
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu				
340	345	350		

<210> 26
 <211> 351
 <212> PRT
 <213> Homo sapiens

<400> 26

Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala			
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Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln			
20	25	30	
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu			
35	40	45	
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp			
50	55	60	
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr			
65	70	75	80
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly			
85	90	95	
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg			
100	105	110	
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg			
115	120	125	
Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys			
130	135	140	
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg			
145	150	155	160

Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

<210> 27
 <211> 1056
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (1).. (1056)
 <223>

<400> 27
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 gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag 96
 Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
 20 25 30
 caa gca cgg tgc ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag 144
 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 tac cag act ttc ttc aat ccg agg acc ttt ggc tgc gga gag gca gac 192
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 tgt ggg ctg cga cct ctg ttc gag aag aag tgc ctg gag gac aaa acc 240

Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr			
65	70	75	80
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc	288		
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly			
85	90	95	
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg	336		
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg			
100	105	110	
aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc	384		
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg			
115	120	125	
tgg gtc ctc acc gcc gcc cac tgc ctc ctg tac ccg ccc tgg gac aag	432		
Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys			
130	135	140	
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc	480		
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg			
145	150	155	160
aca agg tac gag cga aac att gaa gaa ata tcc atg ttg gaa aag atc	528		
Thr Arg Tyr Glu Arg Asn Ile Glu Glu Ile Ser Met Leu Glu Lys Ile			
165	170	175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att	576		
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile			
180	185	190	
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac	624		
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His			
195	200	205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct	672		
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala			
210	215	220	
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg	720		
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp			
225	230	235	240
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac	768		
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn			
245	250	255	
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc	816		
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg			
260	265	270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa	864		
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys			
275	280	285	
cga ggg gat gcc tgt gaa gct gac ggg ggg gga ccc ttt gtc atg aag	912		
Arg Gly Asp Ala Cys Glu Ala Asp Gly Gly Gly Pro Phe Val Met Lys			
290	295	300	
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt	960		
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly			
305	310	315	320
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc	1008		
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe			

325 330 335
 cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag 1056
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

<210> 28
 <211> 351
 <212> PRT
 <213> Homo sapiens

<400> 28
 Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala
 1 5 10 15
 Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
 20 25 30
 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Glu Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Ala Asp Gly Gly Gly Pro Phe Val Met Lys
 290 295 300

Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

<210> 29
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 <213> Homo sapiens

<220>
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 <223>

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 gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag 96
 Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
 20 25 30
 caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag 144
 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac 192
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc 240
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc 288
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg 336
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc 384
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 tgg gtc ctc acc gcc gcc cac tgc ctc ctg tac ccg ccc tgg gac aag 432
 Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc 480
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 aca agg tac gag cga aac att gaa gaa ata tcc atg ttg gaa aag atc 528

Thr Arg Tyr Glu Arg Asn Ile Glu Glu Ile Ser Met Leu Glu Lys Ile
 165 170 175
 tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg aac att 576
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asn Ile
 180 185 190
 gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac 624
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct 672
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg 720
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac 768
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc 816
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa 864
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 cga ggg gat gcc tgt gaa gct gac gct ggg gga ccc ttt gtc atg aag 912
 Arg Gly Asp Ala Cys Glu Ala Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt 960
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc 1008
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag 1056
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

<210> 30
 <211> 351
 <212> PRT
 <213> Homo sapiens

<400> 30
 Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala
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 Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
 20 25 30
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 35 40 45
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp

50	55	60
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr		
65	70	75
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly		80
	85	90
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg		95
	100	105
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg		110
	115	120
Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys		125
	130	135
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg		140
145	150	155
Thr Arg Tyr Glu Arg Asn Ile Glu Glu Ile Ser Met Leu Glu Lys Ile		160
	165	170
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asn Ile		175
	180	185
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His		190
	195	200
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala		205
	210	215
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp		220
225	230	235
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn		240
	245	250
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg		255
	260	265
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys		270
	275	280
Arg Gly Asp Ala Cys Glu Ala Asp Ala Gly Gly Pro Phe Val Met Lys		285
	290	295
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly		300
305	310	315
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe		320
	325	330
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu		335
	340	345
		350

<210> 31

<211> 1056

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(1056)

<223>

<400> 31

atg	gcg	cac	gtc	cga	ggc	ttg	cag	ctg	cct	ggc	tgc	ctg	gcc	ctg	gct	48
Met	Ala	His	Val	Arg	Gly	Leu	Gln	Leu	Pro	Gly	Cys	Leu	Ala	Leu	Ala	
1			5					10					15			
gcc	ctg	tgt	agc	ctt	gtg	cac	agc	cag	cat	gtg	ttc	ctg	gct	cct	cag	96
Ala	Leu	Cys	Ser	Leu	Val	His	Ser	Gln	His	Val	Phe	Leu	Ala	Pro	Gln	
			20					25					30			
caa	gca	cgg	tcg	ctg	ctc	cag	cgg	gtc	cgg	cga	acc	gcc	acc	agt	gag	144
Gln	Ala	Arg	Ser	Leu	Leu	Gln	Arg	Val	Arg	Arg	Thr	Ala	Thr	Ser	Glu	
			35					40				45				
tac	cag	act	ttc	ttc	aat	ccg	agg	acc	ttt	ggc	tcg	gga	gag	gca	gac	192
Tyr	Gln	Thr	Phe	Phe	Asn	Pro	Arg	Thr	Phe	Gly	Ser	Gly	Glu	Ala	Asp	
			50				55				60					
tgt	ggg	ctg	cga	cct	ctg	ttc	gag	aag	aag	tcg	ctg	gag	gac	aaa	acc	240
Cys	Gly	Leu	Arg	Pro	Leu	Phe	Glu	Lys	Lys	Ser	Leu	Glu	Asp	Lys	Thr	
65						70				75				80		
gaa	aga	gag	ctc	ctg	gaa	tcc	tac	atc	gac	ggg	cgc	att	gtg	gag	ggc	288
Glu	Arg	Glu	Leu	Leu	Glu	Ser	Tyr	Ile	Asp	Gly	Arg	Ile	Val	Glu	Gly	
			85						90				95			
tcg	gat	gca	gag	atc	ggc	atg	tca	cct	tgg	cag	gtg	atg	ctt	ttc	cgg	336
Ser	Asp	Ala	Glu	Ile	Gly	Met	Ser	Pro	Trp	Gln	Val	Met	Leu	Phe	Arg	
			100						105				110			
aag	agt	ccc	cag	gag	ctg	ctg	tgt	ggg	gcc	agc	ctc	atc	agt	gac	cgc	384
Lys	Ser	Pro	Gln	Glu	Leu	Leu	Cys	Gly	Ala	Ser	Leu	Ile	Ser	Asp	Arg	
			115					120				125				
tgg	gtc	ctc	acc	gcc	gcc	cac	tgc	ctc	ctg	tac	ccg	ccc	tgg	gac	aag	432
Trp	Val	Leu	Thr	Ala	Ala	His	Cys	Leu	Leu	Tyr	Pro	Pro	Trp	Asp	Lys	
			130				135				140					
aac	ttc	acc	gag	aat	gac	ctt	ctg	gtg	cgc	att	ggc	aag	cac	tcc	cgc	480
Asn	Phe	Thr	Glu	Asn	Asp	Leu	Leu	Val	Arg	Ile	Gly	Lys	His	Ser	Arg	
145						150				155				160		
aca	agg	tac	gag	cga	aac	att	gaa	aag	ata	tcc	atg	ttg	gaa	aag	atc	528
Thr	Arg	Tyr	Glu	Arg	Asn	Ile	Glu	Lys	Ile	Ser	Met	Leu	Glu	Lys	Ile	
						165				170			175			
tac	atc	cac	ccc	agg	tac	aac	tgg	cgg	gag	aac	ctg	gac	cgg	gac	att	576
Tyr	Ile	His	Pro	Arg	Tyr	Asn	Trp	Arg	Glu	Asn	Leu	Asp	Arg	Asp	Ile	
			180						185			190				
gcc	ctg	atg	aag	ctg	aag	aag	cct	gtt	gcc	ttc	agt	gac	tac	att	cac	624
Ala	Leu	Met	Lys	Leu	Lys	Lys	Pro	Val	Ala	Phe	Ser	Asp	Tyr	Ile	His	
			195					200				205				
cct	gtg	tgt	ctg	ccc	gac	agg	gag	acg	gca	gcc	agc	ttg	ctc			

Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa 864
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 cga ggg gat gcc tgt gaa gct gac agt ggg gga ccc ttt gtc atg aag 912
 Arg Gly Asp Ala Cys Glu Ala Asp Ser Gly Gly Pro Phe Val Met Lys
 290 295 300
 agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt 960
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc 1008
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag 1056
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

<210> 32
 <211> 351
 <212> PRT
 <213> Homo sapiens

<400> 32
 Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala
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 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His

195	200	205
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala		
210	215	220
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp		
225	230	235
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn		
245	250	255
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg		
260	265	270
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys		
275	280	285
Arg Gly Asp Ala Cys Glu Ala Asp Ser Gly Gly Pro Phe Val Met Lys		
290	295	300
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly		
305	310	315
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Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln	
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Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu	
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Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp	
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tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc	240
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr	
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gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc	288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly	
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Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg	
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aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc	384
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg	
115 120 125	
tgg gtc ctc acc gcc gcc gcc tgc ctc ctg tac ccg ccc tgg gac aag	432
Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys	
130 135 140	
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc	480
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg	
145 150 155 160	
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc	528
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile	
165 170 175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att	576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile	
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Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His	
195 200 205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctg cag gct	672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala	
210 215 220	
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Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn	
245 250 255	
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc	816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg	
260 265 270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa	864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys	
275 280 285	
cga ggg gat gcc tgt gaa ggg gac ggg ggg gga ccc ttt gtc atg aag	912
Arg Gly Asp Ala Cys Glu Gly Asp Gly Gly Gly Pro Phe Val Met Lys	
290 295 300	
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Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly	
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gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc	1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe	
325 330 335	
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag	1056
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu	
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 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
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 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Gly Asp Gly Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu

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Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln	
20 25 30	
caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag	144
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu	
35 40 45	
tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac	192
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp	
50 55 60	
tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc	240
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr	
65 70 75 80	
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc	288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly	
85 90 95	
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg	336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg	
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aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc	384
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg	
115 120 125	
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Trp Val Leu Thr Ala Ala Ser Cys Leu Leu Tyr Pro Pro Trp Asp Lys	
130 135 140	
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc	480
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg	
145 150 155 160	
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc	528
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile	
165 170 175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att	576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile	
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cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct      672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
      210                      215                      220
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg      720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
      225                      230                      235                      240
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac      768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
      245                      250                      255
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc      816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
      260                      265                      270
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa      864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
      275                      280                      285
cga ggg gat gcc tgt gaa ggg gac gcc ggg gga ccc ttt gtc atg aag      912
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
      290                      295                      300
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt      960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
      305                      310                      315                      320
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc      1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
      325                      330                      335
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag      1056
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
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Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
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Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
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Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
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Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
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 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
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 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
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 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
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 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
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 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
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 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
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 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
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 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
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 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
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 Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln

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caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag			144
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu			
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Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp			
50	55	60	
tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc			240
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr			
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gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc			288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly			
85	90	95	
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg			336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg			
100	105	110	
aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc			384
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg			
115	120	125	
tgg gtc ctc acc gcc gcc gcc tgc ctc ctg tac ccg ccc tgg gac aag			432
Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys			
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Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg			
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aca agg tac gag cga aac att gaa gag ata tcc atg ttg gaa aag atc			528
Thr Arg Tyr Glu Arg Asn Ile Glu Glu Ile Ser Met Leu Glu Lys Ile			
165	170	175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att			576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile			
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gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac			624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His			
195	200	205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct			672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala			
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Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp			
225	230	235	240
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac			768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn			
245	250	255	
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc			816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg			
260	265	270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa			864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys			
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 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
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 gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc 1008
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
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 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
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 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
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 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
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 Thr Arg Tyr Glu Arg Asn Ile Glu Glu Ile Ser Met Leu Glu Lys Ile
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 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
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 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
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 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
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 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240

Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
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 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
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 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
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 aag agt ccc gag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc 384
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Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg			
145	150	155	160
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc			528
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile			
	165	170	175
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att			576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile			
180	185	190	
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac			624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His			
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cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct			672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala			
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Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp			
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aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac			768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn			
	245	250	255
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc			816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg			
260	265	270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa			864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys			
275	280	285	
cga ggg gat gcc tgt gaa ggg gac gcc ggg gga ccc ttt gtc atg aag			912
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys			
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agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt			960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly			
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gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc			1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe			
	325	330	335
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag			1056
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<213> Homo sapiens

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 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
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 Lys Ser Pro Glu Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

<210> 41

<211> 1056

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1).. (1056)

<223>

<400> 41

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Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala	
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gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag	96
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln	
20 25 30	
caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag	144
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu	
35 40 45	
tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac	192
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp	
50 55 60	
tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc	240
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr	
65 70 75 80	
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc	288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly	
85 90 95	
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg	336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg	
100 105 110	
aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc	384
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg	
115 120 125	
tgg gtc ctc acc gcc gcc cac tgc ctc ctg tac ccg ccc tgg gac aag	432
Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys	
130 135 140	
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc	480
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg	
145 150 155 160	
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc	528
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile	
165 170 175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gcc att	576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Ala Ile	
180 185 190	
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac	624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His	
195 200 205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct	672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala	

210	215	220	
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg			720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp			
225	230	235	240
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac			768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn			
245	250	255	
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc			816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg			
260	265	270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa			864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys			
275	280	285	
cga ggg gat gcc tgt gaa ggt gac gct ggg gga ccc ttt gtc atg aag			912
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys			
290	295	300	
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt			960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly			
305	310	315	320
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc			1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe			
325	330	335	
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag			1056
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu			
340	345	350	

<210> 42
 <211> 351
 <212> PRT
 <213> Homo sapiens

<400> 42
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 35 40 45
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys

130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Ala Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

<210> 43
 <211> 1056
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)..(1056)
 <223>

<400> 43
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 gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag 96
 Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
 20 25 30
 caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag 144
 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac 192

Tyr	Gln	Thr	Phe	Phe	Asn	Pro	Arg	Thr	Phe	Gly	Ser	Gly	Glu	Ala	Asp	
50						55					60					
tgt	ggg	ctg	cga	cct	ctg	ttc	gag	aag	aag	tcg	ctg	gag	gac	aaa	acc	240
Cys	Gly	Leu	Arg	Pro	Leu	Phe	Glu	Lys	Lys	Ser	Leu	Glu	Asp	Lys	Thr	
65					70					75					80	
gaa	aga	gag	ctc	ctg	gaa	tcc	tac	atc	gac	ggg	cgc	att	gtg	gag	ggc	288
Glu	Arg	Glu	Leu	Leu	Glu	Ser	Tyr	Ile	Asp	Gly	Arg	Ile	Val	Glu	Gly	
				85					90					95		
tcg	gat	gca	gag	atc	ggc	atg	tca	cct	tgg	cag	gtg	atg	ctt	ttc	cgg	336
Ser	Asp	Ala	Glu	Ile	Gly	Met	Ser	Pro	Trp	Gln	Val	Met	Leu	Phe	Arg	
			100					105					110			
aag	agt	ccc	cag	gag	ctg	ctg	tgt	ggg	gcc	agc	ctc	atc	agt	gac	cgc	384
Lys	Ser	Pro	Gln	Glu	Leu	Leu	Cys	Gly	Ala	Ser	Leu	Ile	Ser	Asp	Arg	
		115					120					125				
tgg	gtc	ctc	acc	gcc	gcc	gcc	tgc	ctc	ctg	tac	ccg	ccc	tgg	gac	aag	432
Trp	Val	Leu	Thr	Ala	Ala	Ala	Cys	Leu	Leu	Tyr	Pro	Pro	Trp	Asp	Lys	
		130				135						140				
aac	ttc	acc	gag	aat	gac	ctt	ctg	gtg	cgc	att	ggc	aag	cac	tcc	cgc	480
Asn	Phe	Thr	Glu	Asn	Asp	Leu	Leu	Val	Arg	Ile	Gly	Lys	His	Ser	Arg	
145					150					155					160	
aca	agg	tac	gag	cga	aac	att	gaa	gcc	ata	tcc	atg	ttg	gaa	aag	atc	528
Thr	Arg	Tyr	Glu	Arg	Asn	Ile	Glu	Ala	Ile	Ser	Met	Leu	Glu	Lys	Ile	
				165					170					175		
tac	atc	cac	ccc	agg	tac	aac	tgg	cgg	gag	aac	ctg	gac	cgg	gac	att	576
Tyr	Ile	His	Pro	Arg	Tyr	Asn	Trp	Arg	Glu	Asn	Leu	Asp	Arg	Asp	Ile	
			180					185					190			
gcc	ctg	atg	aag	ctg	aag	aag	cct	gtt	gcc	ttc	agt	gac	tac	att	cac	624
Ala	Leu	Met	Lys	Leu	Lys	Lys	Pro	Val	Ala	Phe	Ser	Asp	Tyr	Ile	His	
		195					200					205				
cct	gtg	tgt	ctg	ccc	gac	agg	gag	acg	gca	gcc	agc	ttg	ctc	cag	gct	672
Pro	Val	Cys	Leu	Pro	Asp	Arg	Glu	Thr	Ala	Ala	Ser	Leu	Leu	Gln	Ala	
		210				215						220				
gga	tac	aag	ggg	cgg	gtg	aca	ggc	tgg	ggc	aac	ctg	aag	gag	acg	tgg	720
Gly	Tyr	Lys	Gly	Arg	Val	Thr	Gly	Trp	Gly	Asn	Leu	Lys	Glu	Thr	Trp	
225					230					235					240	
aca	gcc	aac	gtt	ggt	aag	ggg	cag	ccc	agt	gtc	ctg	cag	gtg	gtg	aac	768
Thr	Ala	Asn	Val	Gly	Lys	Gly	Gln	Pro	Ser	Val	Leu	Gln	Val	Val	Asn	
				245					250					255		
ctg	ccc	att	gtg	gag	cgg	ccg	gtc	tgc	aag	gac	tcc	acc	cgg	atc	cgc	816
Leu	Pro	Ile	Val	Glu	Arg	Pro	Val	Cys	Lys	Asp	Ser	Thr				

305	310	315	320	
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc				1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe				
325	330	335		
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag				1056
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu				
340	345	350		

<210> 44
 <211> 351
 <212> PRT
 <213> Homo sapiens

<400> 44
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 Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
 20 25 30
 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Ala Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys

275	280	285
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys		
290	295	300
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly		
305	310	315
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe		
325	330	335
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu		
340	345	350

<210> 45
 <211> 1056
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (1)..(1056)
 <223>

<400> 45

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gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag	96
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln	
20 25 30	
caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag	144
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu	
35 40 45	
tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac	192
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp	
50 55 60	
tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc	240
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr	
65 70 75 80	
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc	288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly	
85 90 95	
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg	336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg	
100 105 110	
aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc	384
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg	
115 120 125	
tgg gtc ctc acc gcc gcc gcc tgc ctc ctg tac ccg ccc tgg gac aag	432
Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys	
130 135 140	
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc gcc cac tcc cgc	480

Asn	Phe	Thr	Glu	Asn	Asp	Leu	Leu	Val	Arg	Ile	Gly	Ala	His	Ser	Arg	
145					150				155					160		
aca	agg	tac	gag	cga	aac	att	gaa	aag	ata	tcc	atg	ttg	gaa	aag	atc	528
Thr	Arg	Tyr	Glu	Arg	Asn	Ile	Glu	Lys	Ile	Ser	Met	Leu	Glu	Lys	Ile	
				165					170					175		
tac	atc	cac	ccc	agg	tac	aac	tgg	cgg	gag	aac	ctg	gac	cgg	gac	att	576
Tyr	Ile	His	Pro	Arg	Tyr	Asn	Trp	Arg	Glu	Asn	Leu	Asp	Arg	Asp	Ile	
			180						185				190			
gcc	ctg	atg	aag	ctg	aag	aag	cct	gtt	gcc	ttc	agt	gac	tac	att	cac	624
Ala	Leu	Met	Lys	Leu	Lys	Lys	Pro	Val	Ala	Phe	Ser	Asp	Tyr	Ile	His	
			195						200				205			
cct	gtg	tgt	ctg	ccc	gac	agg	gag	acg	gca	gcc	agc	ttg	ctc	cag	gct	672
Pro	Val	Cys	Leu	Pro	Asp	Arg	Glu	Thr	Ala	Ala	Ser	Leu	Leu	Gln	Ala	
			210						215				220			
gga	tac	aag	ggg	cgg	gtg	aca	ggc	tgg	ggc	aac	ctg	aag	gag	acg	tgg	720
Gly	Tyr	Lys	Gly	Arg	Val	Thr	Gly	Trp	Gly	Asn	Leu	Lys	Glu	Thr	Trp	
225					230					235					240	
aca	gcc	aac	gtt	ggt	aag	ggg	cag	ccc	agt	gtc	ctg	cag	gtg	gtg	aac	768
Thr	Ala	Asn	Val	Gly	Lys	Gly	Gln	Pro	Ser	Val	Leu	Gln	Val	Val	Asn	
				245					250					255		
ctg	ccc	att	gtg	gag	cgg	ccg	gtc	tgc	aag	gac	tcc	acc	cgg	atc	cgc	816
Leu	Pro	Ile	Val	Glu	Arg	Pro	Val	Cys	Lys	Asp	Ser	Thr	Arg	Ile	Arg	
			260						265				270			
atc	act	gac	aac	atg	ttc	tgt	gct	ggc	tac	aag	cct	gat	gaa	ggg	aaa	864
Ile	Thr	Asp	Asn	Met	Phe	Cys	Ala	Gly	Tyr	Lys	Pro	Asp	Glu	Gly	Lys	
			275						280				285			
cga	ggg	gat	gcc	tgt	gaa	ggg	gac	gcc	ggg	gga	ccc	ttt	gtc	atg	aag	912
Arg	Gly	Asp	Ala	Cys	Glu	Gly	Asp	Ala	Gly	Gly	Pro	Phe	Val	Met	Lys	
			290						295			300				
agc	ccc	ttt	aac	aac	cgc	tgg	tat	caa	atg	ggc	atc	gtc	tca	tgg	ggt	960
Ser	Pro	Phe	Asn	Asn	Arg	Trp	Tyr	Gln	Met	Gly	Ile	Val	Ser	Trp	Gly	
305					310					315					320	
gaa	ggc	tgt	gac	cgg	gat	ggg	aaa	tat	ggc	ttc	tac	aca	cat	gtg	ttc	1008
Glu	Gly	Cys	Asp	Arg	Asp	Gly	Lys	Tyr	Gly	Phe	Tyr	Thr	His	Val	Phe	
				325					330				335			
cgc	ctg	aag	aag	tgg	ata	cag	aag	gtc	att	gat	cag	ttt	gga	gag	tag	1056
Arg	Leu	Lys	Lys	Trp	Ile	Gln	Lys	Val	Ile	Asp	Gln	Phe	Gly	Glu		
			340						345				350			

<210>	46
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<212>	PRT
<213>	Homo sapiens

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Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala
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Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
             20             25             30

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Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Ala His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

<210> 47
 <211> 1056
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)..(1056)

<223>

<400> 47

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gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag	96
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln	
20 25 30	
caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag	144
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu	
35 40 45	
tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac	192
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp	
50 55 60	
tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc	240
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr	
65 70 75 80	
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc	288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly	
85 90 95	
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg	336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg	
100 105 110	
aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc	384
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg	
115 120 125	
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Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys	
130 135 140	
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc	480
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg	
145 150 155 160	
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc	528
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile	
165 170 175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att	576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile	
180 185 190	
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac	624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His	
195 200 205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct	672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala	
210 215 220	
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg	720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp	
225 230 235 240	
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac	768

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 ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc 816
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa 864
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 gcc ggg gat gcc tgt gaa ggg gac gcc ggg gga ccc ttt gtc atg aag 912
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 325 330 335
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 <213> Homo sapiens

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 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175

Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
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 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Ala Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
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 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
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 Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
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 caa gca cgg tgc ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag 144
 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
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 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
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 tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc 240
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80

gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc	288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly	
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tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg	336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg	
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aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc	384
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg	
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Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys	
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aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc	480
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg	
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aca agg tac gag cga aac att gaa tcc ata tcc atg ttg gaa aag atc	528
Thr Arg Tyr Glu Arg Asn Ile Glu Ser Ile Ser Met Leu Glu Lys Ile	
165 170 175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att	576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile	
180 185 190	
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac	624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His	
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cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct	672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala	
210 215 220	
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg	720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp	
225 230 235 240	
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac	768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn	
245 250 255	
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc	816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg	
260 265 270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa	864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys	
275 280 285	
cga ggg gat gcc tgt gaa ggg gac gcc ggg gga ccc ttt gtc atg aag	912
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys	
290 295 300	
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt	960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly	
305 310 315 320	
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc	1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe	
325 330 335	
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag	1056

Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
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<400> 50

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 35 40 45
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Ser Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
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180	185	190	
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac			624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His			
195	200	205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct			672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala			
210	215	220	
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg			720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp			
225	230	235	240
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac			768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn			
245	250	255	
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc			816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg			
260	265	270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa			864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys			
275	280	285	
cga ggg gat gcc tgt gaa ggg gac gcc ggg gga ccc ttt gtc atg aag			912
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys			
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agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt			960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly			
305	310	315	320
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc			1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe			
325	330	335	
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag			1056
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu			
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Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu		
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Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp		
50	55	60

Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
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 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Ala His Ser Arg
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 Thr Arg Tyr Glu Arg Asn Ile Glu Ala Ile Ser Met Leu Glu Lys Ile
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 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
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 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
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 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
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 340 345 350

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Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln	
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Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu	
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tac cag act ttc ttc aat ccg agg acc ttt ggc tgc gga gag gca gac	192
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp	
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tgt ggg ctg cga cct ctg ttc gag aag aag tgc ctg gag gac aaa acc	240
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr	
65 70 75 80	
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc	288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly	
85 90 95	
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg	336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg	
100 105 110	
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Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg	
115 120 125	
tgg gtc ctc acc gcc gcc gcc tgc ctc ctg tac ccg ccc tgg gac aag	432
Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys	
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Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Ala His Ser Arg	
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aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc	528
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Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile	
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gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac	624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His	
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cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct	672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala	
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Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp	
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Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn	
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Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg	

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cga ggg gat gcc tgt gaa ggg gac gcc ggg gga ccc ttt gtc atg aag			912
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys			
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gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc			1008
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325	330	335	
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 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
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 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
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 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
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 Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys
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 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Ala His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205

Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
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 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
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 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
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 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
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 Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
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 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
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 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
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 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
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 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
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 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
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tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg	336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg	
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Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg	
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Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys	
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aac ttc acc gag aat gac ctt ctg gtg cgc att ggc gcc cac tcc cgc	480
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Ala His Ser Arg	
145 150 155 160	
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc	528
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile	
165 170 175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att	576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile	
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gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac	624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His	
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cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct	672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala	
210 215 220	
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg	720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp	
225 230 235 240	
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac	768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn	
245 250 255	
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc	816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg	
260 265 270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa	864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys	
275 280 285	
cga ggg gat gcc tgt gaa ggg gac gcc ggg gga ccc ttt gtc atg aag	912
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys	
290 295 300	
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt	960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly	
305 310 315 320	
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc	1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe	
325 330 335	
cgc ctg aag gcc tgg ata cag aag gtc att gat cag ttt gga gag tag	1056
Arg Leu Lys Ala Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu	
340 345 350	

<210> 56
 <211> 351
 <212> PRT
 <213> Homo sapiens

<400> 56

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 Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
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 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Ala His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 Arg Leu Lys Ala Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu

340

345

350

<210> 57
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<400> 57
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 gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag 96
 Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
 20 25 30
 caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag 144
 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac 192
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc 240
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc 288
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt gcc cgg 336
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Ala Arg
 100 105 110
 aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc 384
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 tgg gtc ctc acc gcc gcc gcc tgc ctc ctg tac ccg ccc tgg gac aag 432
 Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc 480
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc 528
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att 576
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190

gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac 624
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct 672
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg 720
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac 768
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc 816
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa 864
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 cga ggg gat gcc tgt gaa ggg gac gcc ggg gga ccc ttt gtc atg aag 912
 Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt 960
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc 1008
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
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 340 345 350

<210> 58
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 <212> PRT
 <213> Homo sapiens

<400> 58
 Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala
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 Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
 20 25 30
 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95

Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Ala Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350